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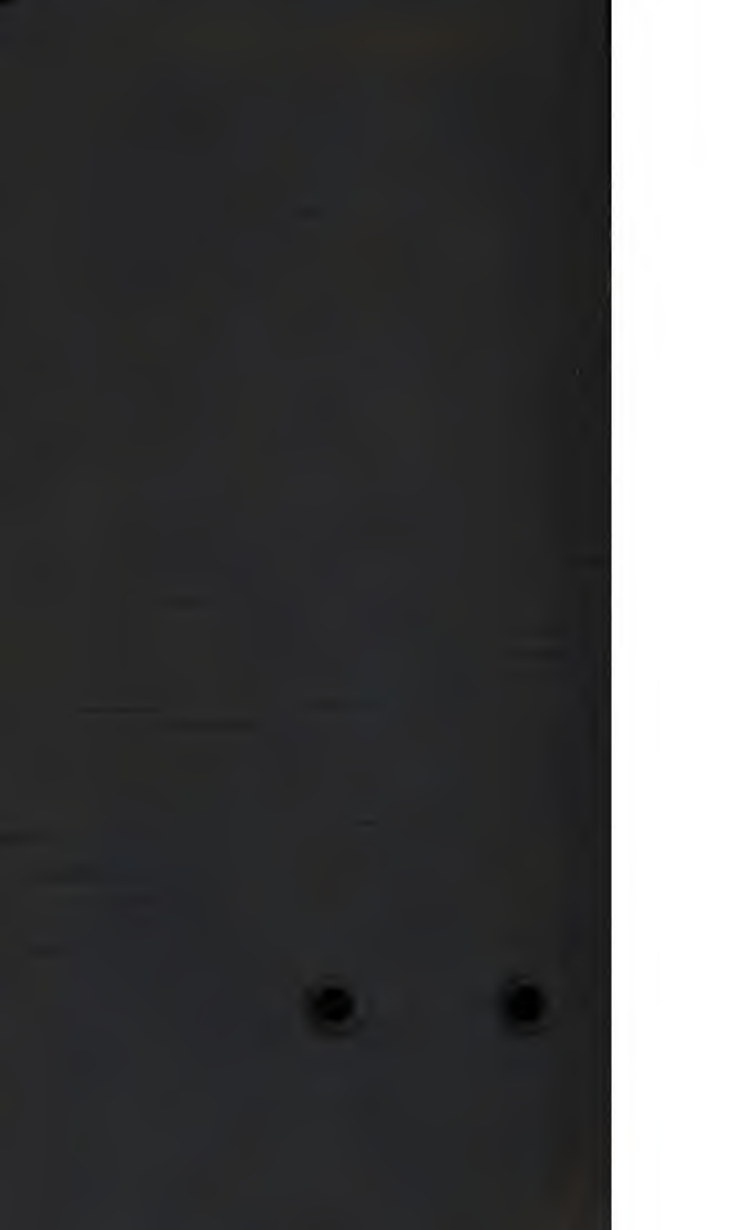
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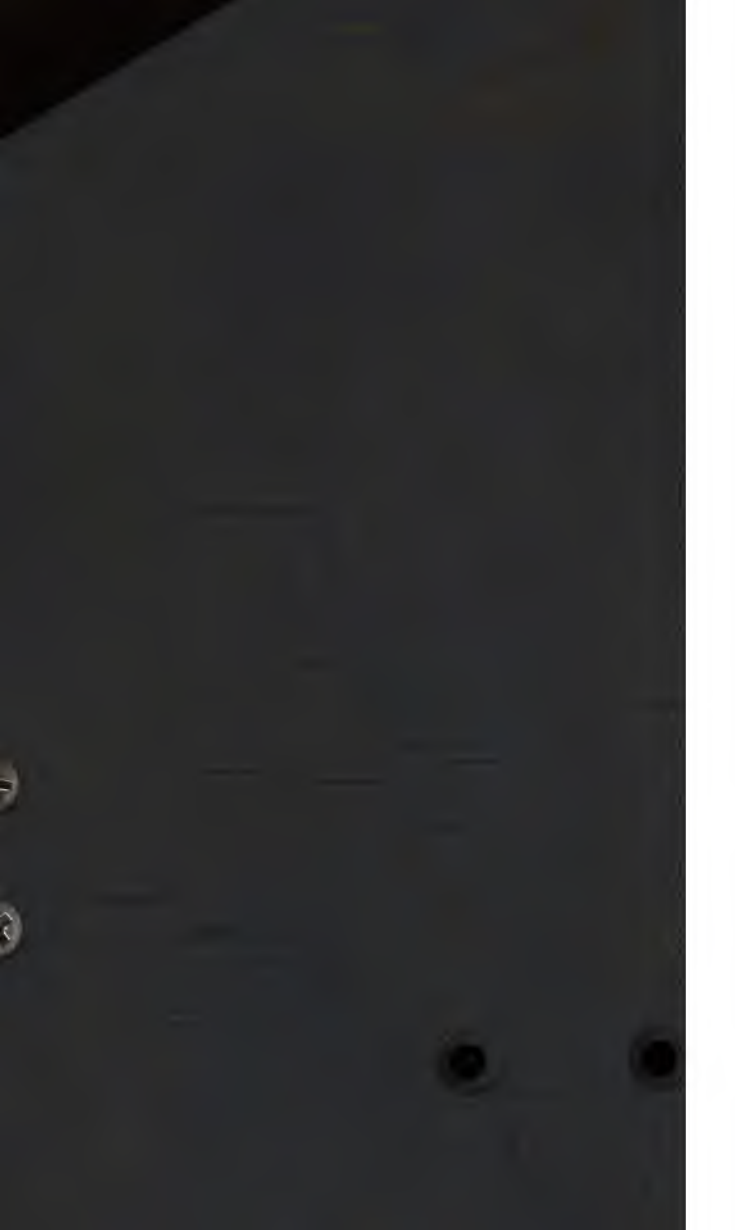
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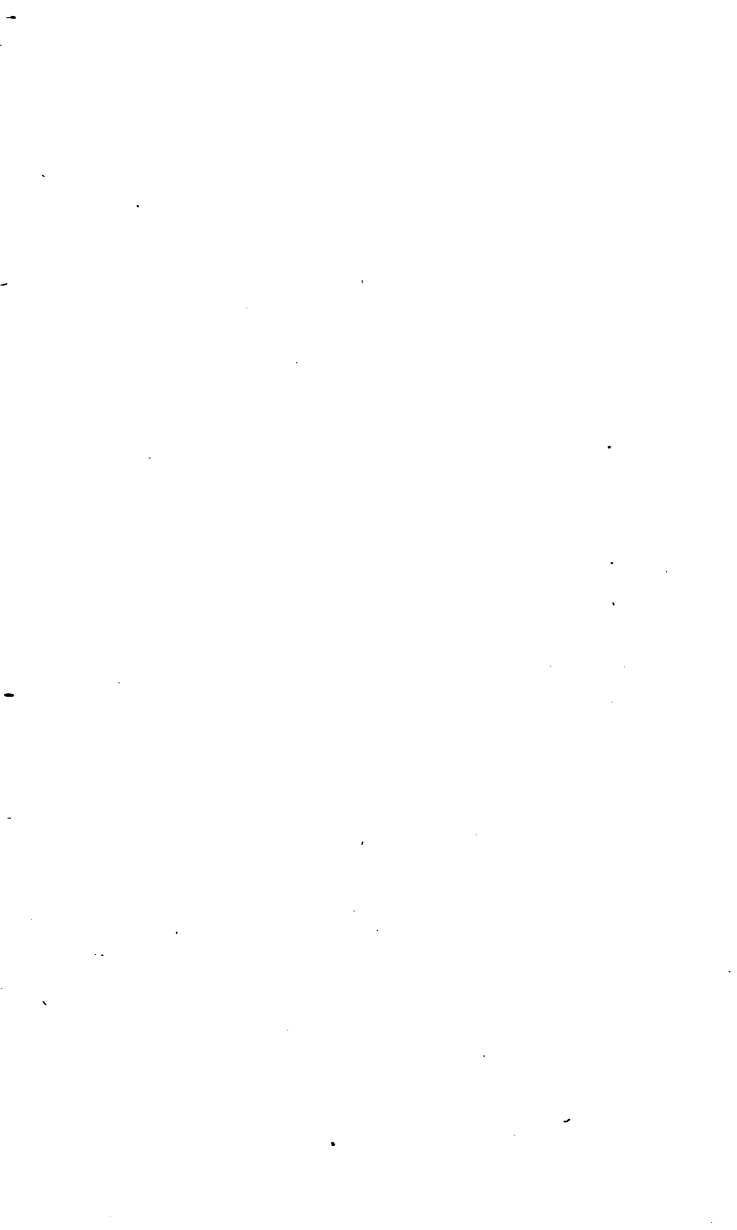
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Price 25 Cents.

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# KEY

TO

## THE NORTH AMERICAN ARITHMETIC, **PART SECOND,** FOR THE USE OF TEACHERS.

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**BY FREDERICK EMERSON,**  
AUTHOR OF THE NORTH AMERICAN ARITHMETIC.

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☐ Soon after the publication of the First Part of the North American Arithmetic, several books appeared, which were evident violations of the copy-right of Part First. One of these books has been suppressed; and the others have not been thought worth noticing. Part Second is now published; and, as its proprietors would avoid litigation, they think proper to give notice, that, if any compiler should avail himself of its peculiarities, redress will be sought under the late act of Congress.

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## PREFACE.

This book contains solutions of some of the questions in the Oral exercises, and answers to *all* the examples in the Written exercises, of the Second Part of the North American Arithmetic.

To those who have been accustomed to teaching arithmetic analytically, that portion of the Key which relates to the Oral exercises, will be useless. Nor need it be used by *any* teacher, who will *begin* Part Second with a class, and proceed step by step through every section. But it may too often happen, that a teacher unacquainted with the method of instructing in mental arithmetic, will be called to the instruction of a school, in which the scholars have already made some progress. In such cases, the solutions will be found convenient.

That portion of the Key which relates to the Written Arithmetic, will be found convenient for *all* teachers; as it will save much time in the examination of answers. The advantage of keeping answers to examples out of the text-book is obvious—If the learner have an answer before him, his immediate object will naturally be, to arrive at that answer in his work, with little regard to the reasons why his work leads to it: but, if the answer be unknown, his effort will be, to discover the course, which he shall perceive, *must of necessity* lead to the answer.



# ORAL SOLUTIONS.

## PART SECOND.

### CHAPTER I.

#### SECTION 1.

*Example 6.* The figure 1, and one cipher.

7. The figure 1, and two ciphers.

#### SECTION 2.

1. Six tens.

2. Sixty.

7. One-hundred and fifty.

12. One-hundred and seventy-five.

### CHAP. II.

#### SECTION 1.

6. 9 cents and 7 cents are 16 cents.

#### SECTION 2.

2. 40 oranges and 20 oranges are 60 oranges.

9. 70 books and 50 books are 120 books.

#### SECTION 3.

2. 30 fishes and 40 fishes are 70 fishes; 70 fishes and 9 fishes are 79 fishes.



## SECTION 5.

1. 25 books and 8 books are 33 books.
2. 7 years and 9 years are 16 years, which will be the son's age. 47 years and 9 years are 56 years, which will be the father's age.

## SECTION 6.

1. 29 dollars and 4 dollars are 33; 33 dollars and 5 dollars are 38 dollars.

## SECTION 7.

2. 23 cents and 30 cents are 53 cents; 53 cents and 9 cents are 62 cents.
16. 5 and 9 are 14, and 2 are 16, and 8 are 24, and 6 are 30, and 4 are 34.

## CHAP. III.

## SECTION 1.

3. She must have as many more, as the difference is, between 7 and 12. 7 from 12 leaves 5.
11. He gave the difference between 9 cents and 18 cents. 9 from 18 leaves 9.

## SECTION 2.

1. As many of the crew were living, as the difference is, between 30 and 70. 30 from 70 leaves 40.

## SECTION 4.

15. 57 and 5 are 62. 5 from 62 leaves 57.
21. 36 and 5 are 41. 5 and 36 are 41. Then 5 from 41 leaves 36. 36 from 41 leaves 5.

## SECTION 5.

- 3 23 questions and 7 questions are 30 questions  
30 questions and 23 questions are 53 questions.

5. 66 dollars and 30 dollars are 96 dollars. 96 dollars from 100 dollars leaves 4 dollars.

7. 48 dollars and 3 dollars are 51 dollars; 51 dollars and 8 dollars are 59 dollars.

12. Arthur's knife was worth 7 cents more than Walter's, therefore, A. should have *received* 7 cents. But, since A. *paid* 6 cents, he lost 7 cents and 6 cents, which is 13 cents.

22. 8 dollars and 15 dollars are 23 dollars; 23 dollars and 12 dollars are 35 dollars, which is what he paid out. Since he sold the whole for 39 dollars, he gained 4 dollars.

## CHAP. IV.

### SECTION 1.

2. It will take 5 times as much cloth to make 5 cloaks, as it will to make 1 cloak. 5 times 4 yards are 20 yards.

### SECTION 2.

2. 10 and 3. 6 times 10 are 60. 6 times 3 are 18. 60 and 18 are 78. Then 6 times 13 are 78.

### SECTION 4.

3. In 1 ounce there are 20 penny-weights. In 4 ounces there are 4 times 20 penny-weights, or 80 penny-weights. 80 penny-weights and 13 penny-weights are 93 penny-weights.

## CHAP. V.

### SECTION 1.

2. I could buy as many pencils, as there are times 4 cents, in 16 cents. 4 in 16; 4 times.

8. As many times as 7 dollars are contained in 14 dollars, so many yards can be purchased. 7 in 14, 2 times.

16. There were as many rows, as there were times 5 trees. 5 in 30, 6 times.

24. 60 limes are worth as many oranges, as 6 is contained times in 60. 6 in 60, 10 times.

### SECTION 2.

7. Each boy must pay as many cents, as 3 is contained times in 24. 3 in 24, 8 times.

20. There are as many sheets in each book, as 7 is contained times in 42. 7 in 42, 6 times.

### SECTION 3

2. 8 is contained in 34, 4 times, and there is 2 over;—therefore he can trim 4 vests, and he will have 2 buttons remaining.

13. 4 is contained in 29, 7 times, and there is 1 over. 7 times 4 is 28, and 1 is 29.

25. As many times as 4 is contained in 15, so many gallon measures can be filled. 4 in 15, 3 times, and 3 over. Therefore, 3 gallon measures can be filled, and there will be 3 quarts over.

29. There are as many hours in 128 minutes, as 60 is contained times in 128. 60 in 128, 2 times and 8 over. *Answer*, 2 hours and 8 minutes.

### SECTION 4.

9. He spent 9 times 4 dollars, which is 36 dollars.

10. If he had spent just 9 dollars in the journey, this sum would have allowed him 1 dollar a day;

therefore, as many times 9 dollars as he spent in the whole journey, so many times 1 dollar did he spend in 1 day. 9 in 36, 4 times.

### SECTION 5.

12. 7 times 5 are 35 ; 8 is contained in 35, 4 times, and there is 3 over.

### SECTION 6.

10. He sold the flour for 7 times 6 dollars, or 42 dollars. He lost the difference between 48 dollars and 42 dollars. 48 minus 42 is 6.

12. 9 dollars plus 12 dollars are 21 dollars ; 21 dollars plus 7 dollars are 28 dollars, which is what three men put in. The fourth man put in the remainder. 40 dollars minus 28 dollars are 12 dollars

13. There must have been 8 times 15 dollars divided. 8 times 15 are 120.

18. 8 cents and 3 cents are 11 cents. 10 times 11 cents are 110 cents, which is what he sold it for.

19. He sold the melons for 4 times 6 cents, which is 24 cents. 25 cents plus 24 cents are 49 cents. 49 cents minus 12 cents are 37 cents.

33. It will take 7 times 1 man, or 7 men.

34. They will perform 9 times 4 days' work or 36 days' work.

35. 36 days' work are required to dig the cellar ; and since 4 men will perform 4 days' work in 1 day, it will take them as many days to complete the work, as there are times 4 in 36. 4 in 36, 9 times.

36. 28 men will perform 28 days' work in 1 day ; and since 7 men will perform 7 days' work in 1 day, therefore, it will take 7 men as many

days to clear the land, as there are times 7 in 28. 7 in 28, 4 times.

40. If he had not found any, he would now have 8 cents. 8 cents and 30 cents are 38 cents, which is what he had at first.

45. The man gathered as many times 7 rows, as the boy gathered times 4 rows. 4 in 32, 8 times; 8 times 7 are 56.

51. The second class gains 9 examples a day; and it will overtake the first, in as many days as 9 is contained times in 81. 9 in 81, 9 times.

59. 8 sheep from 15 sheep leave 7 sheep. 8 times 4 dollars are 32 dollars; 7 times 3 dollars are 21 dollars. 32 dollars plus 21 dollars are 53 dollars; 53 dollars minus 7 dollars are 46 dollars.

## CHAP. VI.

### SECTION 4.

1. 2 cents,—because, there are 2-halves in a whole sheet, and 2 times 1 cent are 2 cents.

3. 1 is 1-half of 2,—because, there are 2 times 1 in 2.

4. 2-thirds of the loaf is worth 2 times as much as 1-third; and 2 times 1 cent is 2 cents. 3-thirds of the loaf, or the whole loaf, is worth 3 times 1 cent, which is 3 cents.

6. 1 is 1-third of 3,—because, there are 3 times 1 in 3. 2 is 2-thirds of 3.

7. 1-fourth of a yard will cost 1 cent. 2-fourths will cost 2 cents. 3-fourths will cost 3 cents. A whole yard will cost 4 cents.

9. 1 is 1-fourth of 4. 2 is 2-fourths of 4. 3 is 3-fourths of 4.

## SECTION 5.

2. 2 is 1-half of 2 times 2, which is 4.

4. 3 is 1-half of 2 times 3, which is 6. 4 is 1-half of 2 times 4, which is 8. 7 is 1-half of 2 times 7, which is 14.

9. 3 is 1-third of 3 times 3, which is 9. 4 is 1-third of 3 times 4, which is 12. 6 is 1-third of 3 times 6, which is 18.

14. 3 is 1-fourth of 4 times 3, which is 12. 4 is 1-fourth of 4 times 4, which is 16. 10 is 1-fourth of 4 times 10, which is 40.

## SECTION 6.

5. 1-third of 6 is as many times 1, as there are times 3 in 6 ; 3 in 6, 2 times. 1-third of 15 is as many times 1, as there are times 3 in 15 ; 3 in 15, 5 times. 1-third of 24 is as many times 1, as there are times 3 in 24 ; 3 in 24, 8 times.

## SECTION 8.

7. 1-fifth of 50 is 10. 4-fifths of 50 is 4 times 10, or 40.

17. 1-seventh of 42 is 6, 3-sevenths is 3 times 6, or 18, which is the number of quills that he would give away. 42 minus 18 is 24, which is the number he would have left.

## SECTION 9.

3. 5 is 5-sixths of 6. 1-sixth of 42 is 7 ; 5-sixths is 5 times 7, which is 35.

## SECTION 10.

3. If 5 men will cut 20 cords, 1 man will cut 1-fifth of 20 cords, which is 4 cords ; 3 men will cut 3 times 4 cords, which is 12 cords.

## SECTION 11.

2. Since 10 is 2-thirds of the required number, 1-half of 10 must be 1-third of that number,—1-half of 10 is 5; since 5 is 1-third of the number, 3 times 5, which is 15, is the number.

21. If 21 workmen can perform 3-fifths of the work, 1-third of 21 workmen can perform 1-fifth of it; 1-third of 21 is 7; if 7 workmen can perform 1-fifth of the work, 5 times 7 workmen, or 35 workmen can perform the whole.

29. 3-ninths plus 4-ninths is 7-ninths; hence the 18 acres must be 2-ninths of the farm. If 18 be 2-ninths, 1-half of 18 acres, which is 9 acres, must be 1-ninth; if 9 acres be 1-ninth, 9 times 9 acres, or 81 acres, must be the whole.

## SECTION 13.

1. For 1 dollar you can buy 1-half of a yard,—because, 1 dollar is 1-half of 2 dollars. For 3 dollars you can buy 1 yard and 1-half,—because, in 3 dollars, there is 1 time 2 dollars, and 1-half of another 2 dollars.

6. For 1 dollar you can buy 1-third of a gallon. For 4 dollars you can buy 1 gallon and 1-third,—because, in 4 dollars, there is 1 time 3 dollars and 1-third of another 3 dollars.

12. 2 and 1-fourth times,—because 4 is contained in 9, 2 times and there is 1 over. 3 and 3-fourths times,—because, 4 is contained in 15, 3 times and there is 3 over. 8 and 2-fourths times,—because, 4 is contained in 34, 8 times and there is 2 over.

## SECTION 14.

7. As many boys as there are thirds in 3 and 2-thirds. In 1 there are 3-thirds; in 3 there are 3 times 3-thirds, or 9 thirds; 9-thirds plus 2-thirds are 11-thirds.

13. In 1 there are 5-fifths. In 2 there are 2 times 5-fifths, or 10-fifths. In 2 and 3-fifths, there are 2 times 5-fifths plus 3-fifths, or 13-fifths. In 4 and 1-fifth, there are 4 times 5-fifths plus 1-fifth, or 21-fifths.

23. 3 yards and 6-eighths will cost as many dollars, as there are eighths of a yard in 3 yards and 6-eighths. In 1 there are 8-eighths; in 3 there are 3 times 8-eighths, or 24-eighths; 24-eighths plus 6-eighths are 30-eighths.

## SECTION 15.

10. 1 and 1-fourth,—because, 4-fourths are contained in 5-fourths, once, and there is 1-fourth over. 3 and 2-fourths,—because, 4-fourths are contained in 14-fourths, 3 times, and there are 2-fourths over. 7 and 3-fourths,—because, 4-fourths are contained in 31-fourths, 7 times, and there are 3-fourths over.

## SECTION 16.

5. 31 and 25 are 56. 3-fifths and 4-fifths are 7-fifths, equal to 1 and 2-fifths. 56 plus 1 and 2-fifths is 57 and 2-fifths.

## SECTION 17.

3. 7 times 3-fourths are 21-fourths, equal to 5 and 1-fourth.



## SECTION 18.

3. 4 times 9 is 36; 4 times 2-fifths are 8-fifths, equal to 1 and 3-fifths; 36 plus 1 and 3-fifths is 37 and 3-fifths.

## SECTION 19.

2. 6 and 7-eighths is 1-fifth of 5 times 6 and 7-eighths. 5 times 6 is 30; 5 times 7-eighths are 35-eighths, equal to 4 and 3-eighths. 30 plus 4 and 3-eighths is 34 and 3-eighths.

3. The whole line is 9 times 5 and 3-fourths yards long. 9 times 5 yards are 45 yards; 9 times 3-fourths are 27-fourths, equal to 6 and 3-fourths. 45 yards plus 6 and 3-fourths yards are 51 and 3-fourths yards.

## SECTION 20.

8. 1-fifth of 1 is 1-fifth; 1-fifth of 4 is 4 times 1-fifth of 1, which is 4-fifths of 1.

11. If only 1 barrel were divided, 1 man would receive 1-seventh of a barrel; therefore if 3 barrels were divided 1 man would receive 3-sevenths of a barrel.

23. 1-fourth of 36 is 36-fourths of 1—equal to 9 whole ones.

## SECTION 21.

6. 1-seventh of 26 is 26-sevenths of 1—equal to 3 and 5-sevenths.— Or, we may say,—1-seventh of 26 is 3 and 5-sevenths,—because, in 26 there are 3 times 7 and 5 over,—the 5 over being 5-sevenths of another 7.

7. 1 man will receive 1-fifth of 48 bushels. 1-fifth of 48 bushels is 9 bushels and 3-fifths,—because, in 48, there are 9 times 5 and 3-fifths of another 5.

35. 5 men can clear the land in 1-fifth of 29 days. 1-fifth of 29 days is 5 and 4-fifths days.

38. Since a man can do 8 times as much work in 8 days as he can in 1 day, to hoe the corn in 8 days, it would take 1-eighth of 24 men. 1-eighth of 24 is 3.

### SECTION 22.

3. If 22 bushels of wheat will make 4 barrels of flour, 1-fourth of 22 bushels will make 1 barrel; 1-fourth of 22 is 5 and 2-fourths. If 5 and 2-fourths bushels will make 1 barrel, 6 times 5 and 2-fourths bushels will make 6 barrels: 6 times 5 is 30, 6 times 2-fourths are 12-fourths, equal to 3. 30 plus 3 is 33.—Or, we may say,—It will take 6-fourths of 22 bushels to make 6 barrels; 1-fourth of 22 is 5 and 2-fourths, 6-fourths of 22 is 6 times 5 and 2-fourths; 6 times 5 is 30, 6 times 2-fourths are 12-fourths, equal to 3. 30 plus 3 is 33.

### SECTION 23.

26. He received 4-fifths of 32 bushels. 1-fifth of 32 is 6 and 2-fifths; 4-fifths of 32 is 4 times 6 and 2-fifths; 4 times 6 is 24, 4 times 2-fifths are 8-fifths, equal to 1 and 3-fifths. 24 plus 1 and 3-fifths is 25 and 3-fifths.

### SECTION 24.

6. If 6 be 5-sixths of some number, 1-fifth of 6 is 1-sixth of that number. 1-fifth of 6 is 1 and 1-fifth; then, if 1 and 1-fifth be 1-sixth of the required number, 6 times 1 and 1-fifth is the number. 6 times 1 is 6, 6 times 1-fifth is 6-fifths, equal to 1 and 1-fifth. 6 plus 1 and 1-fifth is 7 and 1-fifth.

15 If he saved 3-sevenths of his wages, the 30 cents which he spent, must have been the other 4-sevenths. If 30 cents be 4-sevenths of his wages, 1-fourth of 30 cents must be 1-seventh of his wages. 1-fourth of 30 is 7 and 2-fourths. If 7 and 2-fourths cents be 1-seventh of his wages, 7 times 7 and 2-fourths cents must be his wages. 7 times 7 is 49, 7 times 2-fourths are 14 fourths, equal to 3 and 2-fourths. 49 cents plus 3 cents and 2-fourths, are 52 cents and 2-fourths.

## SECTION 25.

6.  $\frac{1}{2}$  is equal to  $\frac{1}{2}$  of  $\frac{12}{12}$ , which is  $\frac{6}{12}$ .  $\frac{1}{2}$  is equal to  $\frac{1}{2}$  of  $\frac{16}{16}$ , which is  $\frac{8}{16}$ .  $\frac{1}{2}$  is equal to  $\frac{1}{2}$  of  $\frac{20}{20}$ , which is  $\frac{10}{20}$ .

11  $\frac{1}{4}$  is equal to  $\frac{1}{4}$  of  $\frac{8}{8}$ , which is  $\frac{2}{8}$ .  $\frac{1}{4}$  is equal to  $\frac{1}{4}$  of  $\frac{12}{12}$ , which is  $\frac{3}{12}$ .  $\frac{1}{4}$  is equal to  $\frac{1}{4}$  of  $\frac{16}{16}$ , which is  $\frac{4}{16}$ .

20.  $\frac{1}{7}$  is equal to  $\frac{2}{14}$ ,  $\frac{4}{7}$  is 4 times  $\frac{2}{14}$ , or  $\frac{8}{14}$ .  $\frac{8}{14}$  plus  $\frac{5}{14}$  is  $\frac{13}{14}$ .

## SECTION 26.

6. 3 in 3, once; 1 is a new numerator: 3 in 6, 2 times; 2 is a new denominator. *Answer*,  $\frac{1}{2}$ .

## SECTION 27.

3.  $\frac{1}{6}$  of  $\frac{1}{5}$  is 6 times less than  $\frac{1}{5}$ ; 6 times 5 is 30, which is the new denominator. *Answer*,  $\frac{1}{30}$ .

20. In 1 lot there was  $\frac{1}{5}$  of  $\frac{2}{3}$  of an acre, and in 3 lots there was  $\frac{3}{5}$  of  $\frac{2}{3}$  of an acre.  $\frac{1}{5}$  of  $\frac{1}{3}$  is  $\frac{1}{15}$ ,  $\frac{1}{5}$  of  $\frac{2}{3}$  is  $\frac{2}{15}$ ;  $\frac{3}{5}$  of  $\frac{2}{3}$  is 3 times  $\frac{2}{15}$ , or  $\frac{6}{15}$ .

## SECTION 28.

9.  $\frac{1}{3}$  of  $\frac{12}{12}$  is  $\frac{4}{12}$ ;  $\frac{1}{4}$  of  $\frac{12}{12}$  is  $\frac{3}{12}$ ;  $\frac{1}{6}$  of  $\frac{12}{12}$  is  $\frac{2}{12}$ .

23. 8 times 7 is 56, which is a common denom-

inator.  $\frac{1}{8}$  of  $\frac{56}{56}$  is  $\frac{7}{56}$ ,  $\frac{3}{8}$  is 3 times  $\frac{7}{56}$ , or  $\frac{21}{56}$ .  $\frac{1}{7}$  of  $\frac{56}{56}$  is  $\frac{8}{56}$ ,  $\frac{2}{7}$  is 2 times  $\frac{8}{56}$ , or  $\frac{16}{56}$ .  $\frac{21}{56}$  plus  $\frac{16}{56}$  is  $\frac{37}{56}$ .

## SECTION 29.

2. 5 dollars plus 5 dollars are 10 dollars. The common denominator for *fourths* and *tenths* is 40.  $\frac{1}{4}$  of  $\frac{40}{40}$  is  $\frac{10}{40}$ ,  $\frac{3}{4}$  is  $\frac{30}{40}$ .  $\frac{1}{10}$  of  $\frac{40}{40}$  is  $\frac{4}{40}$ ,  $\frac{7}{10}$  is  $\frac{28}{40}$ .  $\frac{30}{40}$  plus  $\frac{28}{40}$  is  $\frac{58}{40}$ , equal to  $1\frac{18}{40}$ , or  $1\frac{9}{20}$ . Then 10 dollars plus 1 dollar and  $\frac{9}{20}$  is 11 dollars and  $\frac{9}{20}$ .

5. 7 times 4 is 28, a common denominator.  $\frac{1}{4}$  of  $\frac{28}{28}$  is  $\frac{7}{28}$ ,  $\frac{2}{7}$  is  $\frac{8}{28}$ .  $\frac{1}{4}$  of  $\frac{28}{28}$  is  $\frac{7}{28}$ .  $\frac{8}{28}$  plus  $\frac{7}{28}$  is  $\frac{15}{28}$ , which is the part of the loaf that the first and second soldiers took.  $\frac{28}{28}$  minus  $\frac{15}{28}$  is  $\frac{13}{28}$ , which is the part of the loaf that the third soldier received.

7.  $\frac{3}{4}$  is equal to  $\frac{9}{12}$ , and  $\frac{2}{3}$  is equal to  $\frac{8}{12}$ .  $\frac{9}{12}$  plus  $\frac{8}{12}$  is  $\frac{17}{12}$ , or  $1\frac{5}{12}$ . 2 barrels minus 1 barrel and  $\frac{5}{12}$  is  $\frac{7}{12}$  of a barrel.

10. 25 plus 2 is 27.  $\frac{6}{8}$  is equal to  $\frac{60}{80}$ , and  $\frac{3}{10}$  is equal to  $\frac{24}{80}$ .  $\frac{60}{80}$  plus  $\frac{24}{80}$  is  $\frac{84}{80}$ , or  $1\frac{4}{80}$ , or  $1\frac{1}{20}$ . 27 dollars plus  $1\frac{1}{20}$  dollars, plus 3 dollars, are  $31\frac{1}{20}$  dollars.

## SECTION 30.

3. You can buy as many pairs, as  $\frac{3}{4}$  of a dollar is contained times in 6 dollars. In 1 there is  $\frac{4}{4}$ , in 6 there is 6 times  $\frac{4}{4}$  or  $\frac{24}{4}$ ;  $\frac{3}{4}$  in  $\frac{24}{4}$ , 8 times. *Answer*, 8 pairs.

7. As many yards can be bought, as there are times  $\frac{3}{8}$  of a dollar in 4 dollars. 1 dollar is equal to  $\frac{8}{8}$  of a dollar, 4 dollars are equal to  $\frac{32}{8}$  of a dollar.  $\frac{3}{8}$  in  $\frac{32}{8}$ , 10  $\frac{2}{3}$  times.— *Remark*. The numerator 3 is contained in the numerator 32, 10 times, and there is a remainder of 2; this 2 is  $\frac{2}{3}$  of another time 3.

15. He can hoe  $\frac{3}{4}$  of the field in as many days, as  $\frac{1}{3}$  is contained times in  $\frac{3}{4}$ .  $\frac{1}{3}$  is equal to  $\frac{4}{12}$ , and  $\frac{3}{4}$  is equal to  $\frac{9}{12}$ .  $\frac{4}{12}$  in  $\frac{9}{12}$ ,  $2\frac{1}{4}$  times.

### SECTION 32.

5. 10 hours a day, for 8 days, would be 80 hours. Then, if he should travel 12 hours a day, he would be as many days in performing the journey, as there are times 12 in 80. 12 in 80,  $6\frac{2}{3}$  times, or  $6\frac{2}{3}$  times. *Answer*, 6 days and  $\frac{2}{3}$ .

8. He paid as many times 4 dollars, as there are times 9 dollars in 100 dollars. 9 in 100,  $11\frac{1}{9}$  times. 11 times 4 is 44;  $\frac{1}{9}$  of a time 4, or  $\frac{1}{9}$  of 4, is  $\frac{4}{9}$  of 1. *Answer*, 44 dollars and  $\frac{4}{9}$ .

9. Since  $\frac{4}{5}$  of the pole is under the water, the  $3\frac{1}{2}$  feet above the water, must be  $\frac{1}{5}$  of the length. 5 times 3 is 15; 5 times  $\frac{1}{2}$  is  $\frac{5}{2}$ , or  $2\frac{1}{2}$ ; 15 plus  $2\frac{1}{2}$  is  $17\frac{1}{2}$ .

10.  $\frac{3}{4}$  is equal to  $\frac{6}{8}$ ;  $\frac{6}{8}$  plus  $\frac{1}{8}$  is  $\frac{7}{8}$ . Then  $2\frac{1}{2}$  feet must be  $\frac{1}{8}$  of the length of the pole. 8 times 2 is 16; 8 times  $\frac{1}{2}$  is  $\frac{8}{2}$ , or 4; 16 plus 4 is 20.

11. At 9 shillings a bushel, 8 bushels would be worth 72 shillings. A. must return as many bushels as 7 is contained times in 72. 7 in 72,  $10\frac{2}{7}$  times.

15. He gets  $\frac{1}{16}$  of 1 bushel for grinding  $\frac{1}{16}$  of 1 bushel. Therefore, he will get  $\frac{1}{16}$  of 16 bushels, for grinding  $\frac{1}{16}$  of 16 bushels.  $\frac{1}{16}$  of 16 bushels is equal to 1 bushel.

17. As many times as there are 5 sheep in 35 sheep, so many dollars you must pay for pasturing 35 sheep, 1 month; 5 in 35, 7 times. For pasturing 7 months, you must pay 7 times 7 dollars, or 49 dollars.

18. If 3 horses eat 1 ton in 1 month, 1 horse will

eat  $\frac{1}{3}$  of 1 ton in 1 month; and 4 horses will eat  $\frac{4}{3}$  of 1 ton in 1 month. 5 tons will last 4 horses as many months, as there are times  $\frac{4}{3}$  in 5. 5 is equal to  $\frac{15}{3}$ .  $\frac{4}{3}$  in  $\frac{15}{3}$ ,  $3\frac{3}{4}$  times.

19. 20 dollars was  $\frac{4}{5}$  of what he paid; 5 dollars was  $\frac{1}{5}$ , and 15 dollars was the whole.

21. In 1 hour, the first tap will let off  $\frac{1}{5}$  of the contents, and the second,  $\frac{1}{7}$ .  $\frac{1}{5}$  is equal to  $\frac{7}{35}$ , and  $\frac{1}{7}$  is equal to  $\frac{5}{35}$ . Then both taps, in 1 hour, will let off  $\frac{7}{35}$  plus  $\frac{5}{35}$ , which is  $\frac{12}{35}$  of the contents. They will discharge the cistern in as many hours, as there are times  $\frac{12}{35}$  in  $\frac{35}{35}$ . 12 in 35,  $2\frac{11}{12}$  times.

26.  $\frac{1}{4}$  is equal to  $\frac{3}{12}$ ,  $\frac{1}{3}$  is equal to  $\frac{4}{12}$ ,  $\frac{1}{6}$  is equal to  $\frac{2}{12}$ . Then,  $\frac{3}{12}$  plus  $\frac{4}{12}$  plus  $\frac{2}{12}$  is  $\frac{9}{12}$ , or  $\frac{3}{4}$ . Hence 36 scholars must be  $\frac{1}{4}$  of the school. 4 times 36 scholars are 144 scholars.

27. The shadow of the post is equal to  $\frac{3}{4}$  of the height of the post; therefore, the shadow of the steeple is equal to  $\frac{3}{4}$  of the height of the steeple. If 90 feet be  $\frac{3}{4}$  of the height of the steeple,  $\frac{1}{3}$  of 90 feet, which is 30 feet, is  $\frac{1}{4}$  of the height. 30 feet being  $\frac{1}{4}$  of the height, 4 times 30 feet, or 120 feet is the whole height.

32. The hound gains 3 rods by running 10 rods; and since he has 35 rods to gain, he must run as many times 10 rods, as there are times 3 rods in 35 rods. 3 in 35,  $11\frac{2}{3}$  times. 11 times 10 is 110;  $\frac{2}{3}$  of 10 is  $3\frac{1}{3}$ ,  $\frac{2}{3}$  of 10 is  $6\frac{2}{3}$ . 110 plus  $6\frac{2}{3}$  is  $116\frac{2}{3}$ .

34. 5 dollars, which was the price of the bridle, was a certain part of the whole cost; the price of the saddle was 3 such parts, and the price of the horse was 27 such parts. 1 part plus 3 parts plus 27 parts are 31 parts. Then, 31 times 5 dollars, or 5 times 31 dollars, are 155 dollars.

36.  $\frac{1}{2}$  of what he had, plus  $\frac{1}{4}$ , is equal to  $\frac{3}{4}$  of what he had. What he had was  $\frac{4}{4}$ , and as much more is  $\frac{4}{4}$ . Then  $\frac{4}{4}$  plus  $\frac{4}{4}$  plus  $\frac{3}{4}$  is  $\frac{11}{4}$ . Hence 70 cents is  $\frac{11}{4}$  of what he had. If 70 be  $\frac{11}{4}$  of some number,  $\frac{1}{11}$  of 70 must be  $\frac{1}{4}$  of that number;  $\frac{1}{11}$  of 70 is  $6\frac{4}{11}$ ; 4 times  $6\frac{4}{11}$  is  $25\frac{5}{11}$ .

37. The expense of the whole for 1 week, was  $\frac{1}{5}$  of 85 dollars, which is 17 dollars. The servant's board cost a certain part of 17 dollars, the son's board cost 3 such parts, and the father's cost 6 such parts. 1 part plus 3 parts plus 6 parts are 10 parts. Then the servant's board cost  $\frac{1}{10}$  of 17 dollars, which is  $1\frac{7}{10}$  dollar. The son's board cost 3 times  $1\frac{7}{10}$  dollar, which is  $5\frac{1}{10}$  dollars. The father's board cost twice  $5\frac{1}{10}$  dollars, which is  $10\frac{1}{5}$  dollars.

# ANSWERS

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## EXAMPLES IN WRITTEN ARITHMETIC

### PART SECOND.

#### CHAPTER I

#### N U M E R A T I O N .

##### SECTION 1.

- Ex. 1.* Five hundred and eight.
2. Three thousand, eight hundred and sixty-one.
  3. One thousand and fifty.
  4. Twenty-seven thousand, and four hundred.
  5. Thirteen thousand, and eight.
  6. Twenty-nine thousand, one hundred and eleven.
  7. One hundred twelve thousand, and six hundred.
  8. Thirty thousand, and thirty.
  9. Two hundred six thousand, and two hundred and nine.
  10. Five hundred thousand, and eighty-eight.
  11. Seven million, four hundred thirty-two thousand, and forty.
  12. Two hundred thousand, and five.



13. Nine million, seventy thousand, six hundred and thirty-eight.

14. Three million, eighteen thousand, one hundred and three.

15. Sixteen million, nine hundred seventy-four thousand, and thirty-six.

16. Three hundred forty million, seven thousand, one hundred and forty.

17. Thirty-one million, thirty-one thousand, and thirty-two.

18. Nine million, nine hundred and eight thousand.

19. One million and one.

20. Ninety thousand, and forty.

21. One hundred seven thousand, and ninety.

22. Six million, three hundred and four.

23. Seventy-seven million, and ten thousand.

24. One hundred million, one hundred thousand, and eleven.

25. Two hundred twenty thousand, and two.

26. Eleven million, three hundred thirty-three thousand, one hundred and eleven.

27. Two hundred sixteen million, ninety thousand, and nine hundred.

28. Ten million, and four.

29. Eight billion, and five hundred.

30. Fifty billion, and thirty-six.

31. One billion, seven hundred thousand, and seven.

32. Eight trillion, four hundred billion, fifty-two million, and six hundred.

33. Eight billion, six hundred thirty-one million, and eight thousand.

34. Twenty-two million, and four.

35. Nine hundred nineteen billion, and sixty.

36. Eighty-six trillion, one million, one hundred thousand, and eighteen.

## SECTION 2.

1.	70	13.	700 009
2.	48	14.	13 016 019
3.	124	15.	105 002 001
4.	609	16.	6 040 006 000
5.	3 600	17.	21 100 000 000
6.	2 450	18.	5 014 070 001 236
7.	19 068	19.	122 000 000 847 000
8.	5 731	20.	10 000 987 730
9.	36 740	21.	700 000 000 036 000
10.	268 000	22.	12 000 842 780
11.	905 100	23.	29 809 000 001 018
12.	18 735	24.	823 010 008 015

## CHAP. II.

## ADDITION.

## SECTION 1.

1.	Performed.	4.	19897
2.	158	5.	99879
3.	1499		

## SECTION 2.

1.	Performed.	3.	27597
2.	21 620	4.	21 106

5.	23273	20.	11 907 dollars.
6.	214	21.	2 490 dollars.
7.	1 088	22.	3 334
8.	934	23.	976 dollars.
9.	4 889	24.	\$39 399
10.	4 887	25.	* * * *
11.	92 054	26.	1 799
12.	450 518	27.	7 454 dollars.
13.	5 958	28.	319 dollars.
14.	8 860 705	29.	9 610 dollars.
15.	41 679 451	30.	500 sheep.
16.	568 dollars.		1825 dollars.
17.	1 733 dollars.	31.	2 576 406.
18.	382 acres.	32.	21 319 643 inhab.
19.	340 miles.	33.	12 856 092 inhab.

## CHAP. III.

## SUBTRACTION.

## SECTION 1.

1.	Performed.	5.	701 423
2.	13	6.	223 sheep.
3.	426	7	132 dollars
4	1 043		

## SECTION 2.

1.	Performed.	4.	2 308
2.	483	5.	2711
3.	4 502	6.	Performed.

7.	1 455	18.	500 000 inhab.
8.	2 591	19.	10 500 000 inhab.
9.	34 049	20.	8 940 feet.
10.	25	21.	1 405 dollars.
11.	38	22.	318 dollars.
12.	101	23.	* * *
13.	26 620	24.	* *
14.	9 956	25.	6 casks.
15.	615 dollars.		777 gallons.
16.	6 516 dollars.	26.	766
17.	1 017 537		

## SECTION 3.

1.	82 dollars.	8.	lost 1 dollar.
2.	255 dollars.	9.	39 016
3.	* * * *	10.	447 dollars.
4.	1 955 dollars.	11.	A. D. 1706
5.	11 450 dollars.	12.	57 dollars.
6.	sum 173. rem. 130	13.	7 013 006 200
7.	292 barrels.		

## CHAP. IV.

## MULTIPLICATION.

## SECTION 1.

1.	Performed.	5.	1 680 484
2.	244	6.	690 bushels.
3.	1 048	7.	2 048
4.	27 396		

## SECTION 2.

1.	Performed.	15.	128 724
2.	20 944	16.	4 226 220
3.	3 816	17.	2 008
4.	30 875	18.	1 900
5.	29 120	19.	18 516
6.	93 cents.	20.	122 800
7.	96 cents.	21.	3 010 273
8.	85 cents.	22.	63 000 045
9.	150 dollars.	23.	214 310 000
10.	805 dollars.	24.	3 712 257 236
11.	72	25.	48
12.	144	26.	245
13.	1 710	27.	2 455
14.	45 171		

## SECTION 3.

1.	Performed.	14.	887 124
2.	1 200	15.	513 trees.
3.	28 530	16.	10 875 dollars.
4.	207 333	17.	1 924 dollars.
5.	5 508 426	18.	1 222 miles.
6.	34 716 681	19.	48 564 dollars.
7.	Performed.	20.	32 870 times.
8.	40 033 592	21.	1 175 dollars.
9.	143 370	22.	2 655 dollars.
10.	7 153 515	23.	77 pieces.
11.	764 032		2 233 yards.
12.	36 128 144	24.	378 yards.
13.	486 920		2 268 dollars.

25.	2 520 dollars.	30.	216 days' work.
26.	139 520 rods.	31.	216 days.
27.	401 600 rods.	32.	611 days.
28.	11 904 dollars.	33.	198 men.
29.	61 320 miles.	34.	182 days.

## SECTION 4.

1.	Performed.	18.	7 000 cents.
2.	2 933 904	19.	Performed
3.	57 963 906	20.	\$456
4.	742 495 485	21.	9 288 miles.
5.	Performed.	22.	1 148 bushels.
6.	55 300	23.	15 300
7.	295 200	24.	34 020
8.	189 120	25.	126 315
9.	Performed.	26.	8 000 dollars.
10.	2 008 800	27.	528 750 letters.
11.	68 490 000	28.	13 734 trees.
12.	38 760 000		13 830 138 apples.
13.	50	29.	. 600 days.
14.	1 700	30.	1 000 men.
15.	49 000	31.	81 900 fishes.
16.	600 cents.	32.	811 188 378
17.	2 500 cents.		

## CHAP. V.

## DIVISION.

## SECTION 1.

1.	Performed.	3.	23
2	2	4	312

5.	1 221	7.	212 barrels.
6.	23 sheep.		

## SECTION 2.

1.	Performed.	27.	13 barrels.
2.	8 times.	28.	67 sheep.
3.	71 times.	29.	64 tons.
4.	81 times.	30.	35 yards.
5.	812 times.	31.	1 427 soldiers.
6.	523 times.	32.	492 muskets.
7.	42 wagons.	33.	19 dollars.
8.	82 yards.	34.	19 dollars.
9.	41 hours.	35.	19 biscuit.
10.	23	36.	59 trees.
11.	32	37.	62 fishes.
12.	81	38.	197 dollars.
13.	Performed.	39.	56 miles.
14.	121 times.	40.	242 dollars.
15.	112 times.	41.	29 668 dollars.
16.	321 times.	42.	457 men.
17.	132 times.	43.	6 men.
18.	1 683 times.	44.	6
19.	317	45.	16 dollars.
20.	753	46.	16
21.	Performed.	47.	18
22.	203 times.	48.	Performed.
23.	203 times.	49.	9
24.	803 times.	50.	1 178
25.	320 times.	51.	5 683
26.	1 500 times.	52.	11 256

53.	1 956	58.	1 143 times, 6 over.
54.	Performed.	59.	81 quo. 1 rem.
55.	186 sheep.	60.	279 quotient.
	3 dollars.	61.	80 quo. 4 rem.
56.	19 suits.	62.	18 quo. 1 rem
	1 yard over.	63.	163 quo. 2 rem.
57.	772 times, 5 over.		

## SECTION 3.

1.	Performed.	19.	9 315 times,
2.	1 432 times, 3 over.		54 over.
3.	12 672 times.	20.	2 times.
4.	16 257 times,	21.	21 times, 309 over.
	5 over.	22.	193 times, 239 over.
5.	2 685 750 times,	23.	2 times.
	1 over.	24.	66 times, 160 over.
6.	2 177 245 times,	25.	Performed.
	3 over.	26.	118 quo. 451 rem.
7.	1 291 416 times.	27.	45 414 quo.
8.	Performed.		6 rem.
9.	8 781 times, 1 over.	28.	174 quo. 50 rem
10.	7 802 times, 5 over.	29.	115 quo. 446 rem
11.	150 250 times.	30.	18 541 quo.
12.	23 090 times,		27 rem.
	5 over.	31.	636 quo. 125 rem.
13.	Performed.	32.	46 288 quo. 3 rem.
14.	696 times, 4 over.	33.	319 quo. 174 rem.
15.	1 309 times, 2 over.	34.	14 quo. 587 rem.
16.	17 times, 5 over.	35.	36 944 quo.
17.	30 times, 35 over.		24 rem.
18.	1391 ts., 17 over.	36.	387 acres



37.	14 months.	42.	82 hogsheads.
38.	68 days.	43.	313 hhgs.
39.	43 dollars.		2 gals. left.
40.	7 dollars a day.	44.	16 pounds.
41.	272 dollars.	45.	57 quo. 320 rem.

## SECTION 4

1.	Performed.	21.	Performed.
2.	122 335 times,	22.	158 quo.
	62 over.	23.	16 dollars.
3.	21 times, 74 over.	24.	28 times.
4.	9 times, 1 578 over.	25.	8 dollars.
5.	2 015 times, 3 over.	26.	61 quo.
6.	1 126 times,	27.	17 quo. 27 rem.
	100 over.	28.	3 quo. 24 rem.
7.	2 times.	29.	60 quo. 2 rem.
8.	1 304 quo. 37 rem.	30.	31 quo. 3 rem.
9.	1 418 quo. 89 rem.	31.	135 barrels.
10.	62 times, 531 over.	32.	129 acres.
11.	22 times, 263 over.	33.	138 acres.
12.	21 times,	34.	30 days.
	3 421 over.	35.	105 hogsheads.
13.	31 times, 6 140 over.	36.	23 hats. 3 dols.
14.	24 times.	37.	45 oxen.
15.	43 times, 5 over.		15 dols.
16.	40 times.	38.	19 096 p. 341 b.
17.	7 times, 48 over.	39.	37 dollars.
18.	54 dollars.	40.	148 trees.
19.	6 dollars 42 cents.	41.	24 miles.
20.	19 dollars 37 cents.	42.	1244 dollars

## SECTION 5.

1.	800 000 000 inhab.	24.	16 months.
2.	9 442 215 dols.	25.	11 months
3.	190 years.	26.	407 dollars.
4.	\$25 200 000	27.	426 barrels
5.	3 days.	28.	558 dollars
6.	36 days.	29.	973 dollars.
7.	11 875 000 miles.	30.	48 cows.
8.	886 144 miles.	31.	208 dollars.
9.	133 C, 160 dols. over.	32.	8 cows.
10.	293 dollars.	33.	24 dollars.
11.	2 964 dollars.	34.	24
12.	228 barrels.	35.	169 miles.
13.	228 times.	36.	16 hhds. 5 bus.
14.	342 dollars.	37.	23 days.
15.	112 acres.	38.	7 miles.
16.	112 times.	39.	17 oxen. 7 sheep.
17.	254 dollars.	40.	436 dollars.
18.	40 911 dollars.	41.	1 376 notes.
19.	lost 410 dols.	42.	229 dollars.
20.	1 200 acres.	43.	6 886
21.	21 dollars.	44.	71
22.	18 192 dollars.	45.	9 600
23.	1 160 gallons.		

## SECTION 6.

1.	8 600 cents.	5.	Performed.
2.	758 cents.	6.	\$144.38
3.	\$37	7.	\$545.27
4.	\$5.34	8.	\$126.44

9.	\$514.37	39.	\$7.20
10	\$24.37	40	\$6.40
11.	\$79.64	41.	\$38.82
12.	\$140.17	42.	\$28.75
13.	\$32.67	43.	\$4.80
14.	\$23.75	44.	\$18.60
15.	\$2.13	45.	\$11.76
16.	\$41.32	46.	\$102.20
17.	\$295.06	47.	\$86
18.	Performed.	48.	\$12.84
19.	\$129.48	49.	\$10920.40
20.	\$5 358.88	50.	\$550.40
21.	\$50.58	51.	\$11 297.70
22.	93 cents.	52.	\$13.80
23.	\$753.95	53.	\$61.92
24.	\$3.96	54.	\$294
25	\$5.94	55.	\$49.50
26.	\$5.93	56.	\$709.75
27.	\$1.85	57.	\$2 144.52
28.	\$16.50	58.	Performed.
29.	\$263.06	59.	337 times.
30.	\$153.75	60.	74 times.
31.	\$133.20	61.	30 times.
32.	Performed.	62.	46 834 times.
33.	\$4.32	63.	43 pencils
34.	\$366.17	64.	17 pounds
35.	\$6	65.	43 days.
36.	\$8	66.	14 cents.
37.	\$8.17	67.	\$3.19
38	\$157 642.92	68.	\$5.41

69.	Performed.	74.	\$607.62. 6 rem.
70.	\$125.24. 36 rem.	75.	\$45.10
71.	\$28.75	76.	\$394.40
72.	\$1.58. 6 rem.	77.	825 bushels.
73.	\$11.67		

## SECTION 8.

1.	Performed.	23.	216 doses.
2.	Performed.	24.	20 nails.
3.	895 farthings.	25.	1 015 yards.
4.	£9 11s. 9d. 3qr.	26.	1 283 quarters.
5.	1 211 pence.		427 Fl. ells, 2qr.
6.	13s. 5d. 3qr.	27.	12 nails.
7.	97 times, 4 over.	28.	2 920 yards.
8.	Performed.	29.	64 pints.
9.	Performed.	30.	3 775 pints
10.	2 436dwt.	31.	257bu. 2pk
11.	3lb. 5oz. 9dwt.	32.	70 bushels.
12.	5 268 grains.	33.	263bu. 1pk.
13.	4lb. 1oz. 5dwt. 1gr.	34.	2 016 gills.
14.	2 240 pounds.	35.	18hhd. 1gal. 2qt.
15.	4 042 589 drams.	36.	\$60.48
16.	13T. 17cwt. 3qr.	37.	\$675.36
	14lb.	38.	2hhd. 10gal. 3qt. 1pt.
17.	\$1 166.79	39.	648 pints.
18.	176 firkins.	40.	90kil. 1fir. 5gal. 2qt.
19.	288 scruples.	41.	1 152 bottles.
20.	14lb 6 $\frac{2}{3}$ 33	42.	6 cents
21.	721 doses.	43.	6bl. 1kil. 3qts
22.	\$36	44.	1 294 inches

45.	273yd. 2ft. 7in. 1bar.	56.	300 cubic feet, 18ft. w. 12c. ft
46.	16 000 rods.		2c. 2ft. w. 12c. ft.
47.	21 600 miles.	57.	128 cubic feet.
48.	70yd. 1ft. 9in.	58.	31 536 000 seconds in a common year.
49.	6yd. 0ft. 8in.		31 622 400 seconds in a leap year.
50.	104 square inches.		31 556 928 seconds in a solar year.
51.	448 square rods. 2A. 3R. 8r.	59.	82 080 minutes.
52.	72 square yards.	60.	3 258 720 times.
53.	64 cubic inches.	61.	4 years 272 days.
54.	3ft. 316in.		
55.	86 400 inches.		

## SECTION 9.

1.	Performed.	13.	1 233bu 1pk. 7qt. 1pt.
2.	£135 12s. 11d. 3qr.	14.	972bu. 3pk. 3qt. 1pt.
3.	£531 8s. 10d. 3qr.	15.	569hhd. 51gal. 3qt. 1pt.
4.	£16 18s. 10d.	16.	12T. 1p. 101gal. 2qt.
5.	8lb. 11oz. 18dwt. 4gr.	17.	48bl. 0kil. 0fir. 0gal 1qt. 1pt.
6.	13lb. 5oz. 3dwt. 20gr.	18.	45bl. 1kil. 1fir. 0gal. 1qt. 1pt.
7.	41T. 16cwt. 0qr. 21lb. 1oz. 11dr.	19.	80yd. 1ft. 2in. 2bar.
8.	8T. 13cwt. 3qr. 9lb. 3oz. 2dr.	20.	86ml. 3fur. 28rd.
9.	8fb 4 $\frac{3}{4}$ 13 2 $\frac{1}{2}$ 6gr.	21.	122yd. 6ft. 129in.
10.	5fb 11 $\frac{3}{4}$ 53 0 $\frac{1}{2}$ 15gr.	22.	548A. 3R. 38rd
11.	124yd. 3qr. 1na.	23.	27T. 15ft. 754in.
12.	303E. ells 0qr. 2na.		

24.	29c. 6ft. w. 6c. ft.	26.	1 <sup>2</sup> y. 251d. 7h.
25.	4y. 144d. 2h.		44m. 43s.
	29m. 39s.		

## SECTION 10.

1.	Performed.	14.	53bu. 1pk.
2.	£57 2s. 11d.	15.	57gal. 1qt.
3.	6s. 7d. 1qr.	16.	34gal. 1qt. 1pt.
4.	£780 16s. 1d. 3qr.	17.	4bl. 0kil. 1fir.
5.	1lb. 10oz. 10dwt.		1gal. 1qt.
6.	3lb. 3oz. 6dwt.	18.	14bl. 0kil. 1fir.
7.	8T. 4cwt. 2qr. 15lb.	19.	2ft. 1in
8.	12T. 6cwt.	20.	3m. 4fur. 8r.
9.	1 <sup>1</sup> lb 0 <sup>3</sup> 5 <sup>3</sup> 0 <sup>9</sup> 4gr.	21.	88 acres.
10.	2 <sup>3</sup> 6 <sup>3</sup>	22.	1T. 46ft.
11.	45yd. 1qr. 3na.	23.	1y. 334d. 5h. 10m.
12.	38yd. 3qr. 1na.	24.	43d. 17h.
13.	82bu. 2pk. 0qt. 1pt.		

## SECTION 11.

1.	Performed.	10.	£76 1s. 8d.
2.	£2 648 9s. 5d. 3qr.	11.	98lb. 2oz. 19dwt.
3.	£356 11s. 10d.		5gr.
4.	£45 179 8s. 1d. 2qr.	12.	9oz. 10dwt. 16gr.
5.	£6 020 6s.	13.	60T. 19cwt.
6.	£2 584 19s. 4d. 2qr.	14.	7T. 7cwt. 0qr. 11lb.
7.	£118 3s.	15.	267yd. 0qr. 3na.
8.	£80 350 4s. 3d.	16.	1 658yd. 0qr. 2na.
9.	£11 5s. 11d. 2qr.	17.	169bu. 3pk. 0qt. 1pt.

18.	48bu. 0pk. 3qt.	23.	47lea. 1m. 7fur. 8r.
19.	3T. 1p. 1hhd.	24.	1002m. 1fur. 26r.
	21gal. 2qt.	25.	221A. 2R. 2r.
20.	10hhd. 16gal. 3qt.	26.	732yd. 6ft.
21.	46bl. 1kil. 1fir.	27.	5T. 24ft. 144in.
	1gal. 1qt. 1pt.	28.	15c. 3ft. w.
22.	3bl. 0kil. 0fir.	29.	42Y. 111d.
	1gal. 1qt.	30.	10d 10h.

## SECTION 12.

1.	Performed.	8.	2yd. 2qr.
2.	6s. 7d. 3qr., 2 farthings being undivided.	9.	11bu 2pk. 7qt.
3.	£3 6s. 11d. 3qr.	10.	1 pint.
4.	8s. 8d.	11.	1hhd. 42gal. 3qt.
5.	Performed.	12.	7m. 2fur. 14r.
6.	£12 8s. 9d. 2qr., 26 farthings undivided.	13.	56m. 4fur. 30r.
7.	1cwt. 3qr. 2lb.	14.	5A. 2R. 23r.
		15.	221A. 1R. 30r.
		16.	1d. 10h. 2m. 15s.

## CHAP. VI.

## FRACTIONS.

## SECTION 1.

1	Performed.	6.	$\frac{15}{18}$
2.	$\frac{7}{8}$	7.	$\frac{64}{74}$
3.	$\frac{15}{19}$	8.	$\frac{2}{3}$ or 1
4.	$\frac{13}{16}$ of a dollar.	9.	$\frac{82}{114}$
5.	$\frac{21}{25}$		

## SECTION 2.

1	$\frac{6}{8}$	3.	$\frac{26}{45}$
2.	$\frac{14}{20}$	4.	$\frac{1}{100} \frac{2}{100} \frac{6}{100} \frac{25}{100} \frac{99}{100}$

## SECTION 3.

1.	Performed.	8.	$\frac{11}{18}$
2.	$\frac{5}{10}$	9.	$\frac{12}{24}$
3.	$\frac{3}{9}$	10.	$\frac{254}{500}$
4.	$\frac{5}{19}$	11.	$\frac{9}{34}$
5.	$\frac{18}{47}$	12.	$\frac{31}{100}$
6.	$\frac{6}{20}$ of a ton.	13.	$\frac{286}{530}$
7.	$\frac{2}{8}$		

## SECTION 4.

1.	$\frac{1}{10} \frac{2}{10} \frac{5}{10} \frac{9}{10}$	8.	$\frac{1}{8} \frac{7}{8}$
2.	$\frac{1}{20} \frac{6}{20} \frac{14}{20}$	9.	$\frac{1}{63} \frac{18}{63}$
3.	$\frac{1}{35} \frac{8}{35} \frac{11}{35} \frac{34}{35}$	10.	\$12. \$63
4.	$\frac{1}{100} \frac{2}{100} \frac{9}{100} \frac{46}{100} \frac{94}{100}$	11.	$\frac{1}{365} \frac{10}{365} \frac{40}{365} \frac{100}{365} \frac{275}{365}$
5.	$\frac{1}{12} \frac{7}{12}$	12.	\$14. \$190. \$365
6.		13.	$\frac{1}{2016} \frac{84}{2016} \frac{759}{2016}$
7.			

## SECTION 5.

1.	\$9 406	9.	308
2.	9 406	10.	55 216
3.	213 bushels.	11.	\$11.99
4.	213	12.	408 miles.
5.	3 500	13.	11 220
6.	9 500	14.	\$138
7.	1 380 men	15.	14cwt. 1qr. 24lb.
8.	1 380		



## SECTION 6.

1.	63 bushels.	8.	52 cents.
2.	63	9.	\$1784.15
3.	12 802 needles.	10.	\$12.82
4.	12 802	11.	\$2 67 5
5.	79 quills.	12.	24
6.	219 meaks.	13.	7yd. 2or. 1na.
7.	288 cubic inches		

## SECTION 7.

1.	\$35	5.	$\frac{1}{170}$ . 39 bushels
2.	$\frac{1}{8}$ . \$492	6.	$\frac{1}{6}$ . £1 18s. 7d. 2qr.
3.	$\frac{1}{17}$ . 32 acres.	7.	\$4.20
4.	$\frac{1}{13}$ . \$2.15		

## SECTION 8.

1.	\$3 224	10.	Performed.
2.	1 270	11.	35 091
3.	11 896 ears.	12.	38
4.	7 149	13.	\$268.64
5.	\$36.12	14.	115gal. 2qt.
6.	54 quills.	15.	\$89.46
7.	27 gallons.	16.	\$803.48
8.	£15 14s. 5d.	17.	\$1.68
9.	1888		

## SECTION 9.

1.	$\frac{3}{8}$ . \$257.46	5.	192 rods.
2.	$\frac{11}{13}$ . 84 yards.	6.	\$3 800
3.	$\frac{2}{13}$ 169bu. 3pk. 4qt.	7.	950 miles.
4.	342 barrels.	8.	£31 15s. 3d.

## SECTION 10.

1.	455 trees.	6.	1750
2.	455	7.	\$58.24
3.	\$195.69	8.	\$58.24
4.	\$195.69	9.	\$314.40
5.	1750 pounds.	10.	75 pounds.

## SECTION 11.

1.	14bu.	70bu.	8.	\$44.87
2.	\$7.50.	\$60	9.	528 miles
3.		\$60	10.	216 men
4.	21 miles.	252 miles.	11.	216
5.		252	12.	\$1840
6.	\$5.75.	\$97.75	13.	\$120.75
7.		\$97.75		

## SECTION 12

1.	$\frac{83}{100}$ of a dollar.	7.	$\frac{1}{14}$ . 5 books
2.	$\frac{14}{20}$ of a ton.	8.	\$66
3.	$\frac{3}{19}$ of his money.	9.	$\frac{6}{14}$ . \$40.14
4.	$\frac{15}{60}$ of an hour.	10.	\$134.25
5.	1300 miles.	11.	39s. or £1 19s.
6.	\$16.50		

## SECTION 13.

1.	Performed.	6.	21 $\frac{3}{4}$ bushels
2.	24 $\frac{1}{2}$ yards.	7.	21 $\frac{14}{16}$ hours
3.	24 $\frac{1}{2}$ times.	8.	87 $\frac{5}{12}$ times.
4.	127 $\frac{4}{5}$ barrels.	9.	1969 $\frac{2}{37}$ times.
5.	127 $\frac{4}{5}$ times.	10.	£21 $\frac{1}{3}$

PART SECOND.

[VI.]

11.	$27\frac{9}{20}$ yards.	13.	$41\frac{1}{17}$ times.
12.	$13\frac{3}{4}$ tons.	14.	$15\frac{1}{2}$ cwt.

SECTION 14.

1.	Performed.	8.	Performed.
2.	$\frac{3}{2}$ of a sheet	9.	$4\frac{57}{8}$ of a mile.
3.	$\frac{8}{9}$ of a dollar.	10.	$1\frac{172}{17}$
4.	$1\frac{86}{6}$ of a pound.	11.	$2\frac{53}{63}$
5.	$\frac{584}{8}$ of a yard.	12.	34 gallons
6.	$\frac{5769}{9}$ $\frac{6410}{10}$	13.	159 yards.
7.	1 134 miles.		

SECTION 15.

1.	Performed.	8.	2 120 pounds.
2.	24 sheets.	9.	Performed.
3.	\$49	10.	$35\frac{4}{7}$
4.	22 pounds.	11.	$\$63\frac{3}{8}$
5.	152 yards.	12.	47 gallons.
6.	14 hours.	13.	$\$62\frac{2}{5}$
7.	13	14.	$\$81\frac{5}{6}$

SECTION 16.

1.	4	6.	$25\,674\frac{2}{5}$
2.	Performed.	7.	$5\,419\,457\frac{46}{68}$
3.	$9\,452\frac{6}{7}$	8.	$31\frac{3}{8}$ yards.
4.	11 581	9.	$56\frac{1}{16}$ pounds
5.	Performed.		

SECTION 17.

1.	$28\frac{1}{2}$ miles.	2.	$28\frac{1}{2}$
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3.	$15\frac{6}{8}$ yards.	5.	$22\frac{2}{5}$ pounds
4	$15\frac{6}{8}$ times.	6.	22

## SECTION 18.

1	Performed.	8.	146
2.	$293\frac{2}{9}$	9.	$1683\frac{11}{16}$ gallons
3.	$\$274\frac{3}{8}$	10.	$\$3544\frac{7}{10}$
4.	$142\frac{12}{20}$	11.	$3789\frac{6}{18}$ miles
5.	$132583\frac{24}{48}$	12.	$8\frac{13}{49}$ times
6.	Performed.	13.	$\$27\frac{75}{10}$
7.	$188747\frac{2}{10}$	14.	$296\frac{2}{16}$ bushels

## SECTION 19.

1	$\$34.37\frac{1}{2}$	5.	$2749\frac{2}{1}$
2.	$277\frac{2}{4}$ miles.	6.	$\$$
3.	$15021\frac{7}{8}$	7.	$\$7$
4.	$180\frac{5}{6}$ yards.		

## SECTION 20.

1.	$\frac{2}{5}$ of $\$1$	7.	$\frac{2}{39} \frac{3}{39} \frac{4}{39} \frac{18}{39} \frac{3}{39}$
2.	$\frac{2}{5}$ of 1	8.	$\frac{29}{3}$ of a bu $9\frac{1}{3}$ bu
3.	$\frac{5}{6}$ of a barrel.	9.	$\frac{28}{3}$ . 9
4.	$\frac{5}{6}$ of 1	10.	$\frac{42}{5}$ . 8
5.	$\frac{10}{16}$ of 1 bushel.	11.	$\frac{29}{13}$ . $2\frac{1}{13}$
6.	$\frac{10}{16}$ of 1	12.	$\frac{721}{6}$ of $\$1$ . $\$120$

## SECTION 21.

1.	$\$28\frac{3}{4}$	3.	$158\frac{3}{5}$ acres
2	$28\frac{3}{4}$	4.	$219\frac{1}{4}$ $66\frac{2}{3}$ 911

5.	\$45.93 $\frac{4}{12}$	12.	8 drams.
6.	4593 $\frac{4}{12}$ 34 $\frac{15}{28}$ 16 $\frac{12}{43}$	13.	51 $\frac{6}{11}$ gallons.
7.	16 $\frac{8}{25}$ pages.	14.	17 $\frac{8}{16}$ rods.
8.	3 $\frac{2}{6}$ shillings.	15.	123 $\frac{3}{7}$ square inches.
9.	15 $\frac{5}{9}$ shillings.	16.	3000 seconds.
10.	7 $\frac{1}{2}$ pence.	17.	\$23.31
11.	14 $\frac{4}{10}$ grains.		

## SECTION 22.

1.	38 $\frac{31}{4}$ of a bu.	5.	\$2
2.	38 $\frac{31}{4}$	6.	132 $\frac{13}{16}$ pounds.
3.	\$61 $\frac{6}{8}$	7.	\$118 $\frac{9}{12}$
4.	61 $\frac{6}{8}$ 457 $\frac{8}{10}$ 96 $\frac{6}{14}$	8.	55 $\frac{15}{21}$ bushels.
	57365	9.	37bu. 1pk. 0qt. 1pt.

## SECTION 23.

1.	\$1.35 $\frac{2}{4}$	15.	2012 $\frac{2}{4}$ miles.
2.	\$4.06 $\frac{2}{4}$	16.	2012 $\frac{2}{4}$
3.	\$13.28 $\frac{4}{7}$	17.	582 $\frac{2}{5}$ 1232 $\frac{8}{9}$ 935 $\frac{2}{6}$
4.	\$66.42 $\frac{6}{7}$		4764 $\frac{4}{7}$ 16332 $\frac{6}{10}$
5.	470 $\frac{5}{8}$ 2823 $\frac{6}{8}$	18.	Performed.
6.	14gal. 98 gal.	19.	1 2
7.	16675 $\frac{5}{9}$ feet.	20.	\$7
8.	1333 $\frac{33}{99}$ miles.	21.	\$155
9.	\$750	22.	\$255
10.	\$10.71 $\frac{3}{7}$	23.	\$5.55
11.	\$136 50	24.	\$5.31
12.	284 $\frac{4}{9}$ rods.	25.	25 $\frac{13}{100}$ gallons.
13.	84375 pounds.	26.	Performed.
14.	8437 $\frac{4}{8}$	27.	\$176.19

28.	\$3.60	52.	\$1.63 $\frac{8}{12}$ for 4m.
29.	\$2.82 $\frac{56}{100}$		\$2.04 $\frac{7}{12}$ for 5m.
30.	\$42.34 $\frac{14}{100}$		\$2.45 $\frac{6}{12}$ for 6m.
31.	\$530.23 $\frac{85}{100}$		\$2.86 $\frac{5}{12}$ for 7m.
32. A, \$470. B, \$530			\$3.27 $\frac{4}{12}$ for 8m.
33.	31 cents.		\$3.68 $\frac{3}{12}$ for 9m.
34.	\$2.79		\$4.09 $\frac{2}{12}$ for 10m.
35.	82 cents.		\$127.25 $\frac{1}{12}$ amount.
36.	\$13.12	53.	94 $\frac{3}{12}$ cents.
37.	\$535.19	54.	\$4.87 $\frac{4}{6}$
38.	\$4.80	55.	\$530.13 $\frac{1}{2}$
39.	\$6.24 $\frac{15}{90}$	56.	\$10.61 $\frac{2}{3}$
40.	\$4.76	57.	\$110.41
41.	\$347.10	58.	\$17.01
42.	\$5. \$105	59.	\$177.62 $\frac{1}{2}$
43.	5 cents. \$1.05	60.	\$36.52, first pay- ment. \$79.16 $\frac{1}{2}$ second payment.
44.	\$21.24 for 1y. \$42.48 for 2y. \$63.72 for 3y. \$84.96 for 4y. Amount, \$438.96	61.	26 cents.
45.	\$9.72 \$50.22	62.	12 cents.
46.	\$3.78 \$21.78	63.	88 cents.
47.	\$13456	64.	\$2.89
48. \$1067.55 \$7537.55		65.	\$2.69
49. 17 $\frac{6}{12}$ cts. \$35.17 $\frac{6}{12}$		66.	\$17.51
50.	24 $\frac{6}{12}$ cents.	67.	\$420.70
51.	\$53.63 $\frac{3}{4}$	68.	\$190.23
		69.	\$9.52.
		70.	\$4.82.
		71.	\$28.38
		72.	\$7.32

73.	\$3.11	78.	\$141.50 $\frac{50}{53}$
74	\$20.38	79.	\$1490.90 $\frac{10}{11}$
75	He loses 8 cents.	80.	33 $\frac{51}{53}$ cents.
76.	\$6.32 $\frac{17}{23}$	81.	\$64.37 $\frac{179}{233}$
77.	\$13.98 $\frac{6}{53}$		

## SECTION 24.

1.	\$39.62 $\frac{1}{3}$	\$158.49 $\frac{1}{3}$	5.	22 677 $\frac{4}{8}$
2.		15 849 $\frac{1}{3}$	6.	\$271.42 $\frac{6}{7}$
3.	50 cents.	\$6	7.	\$175
4.	8 $\frac{13}{15}$ bu.	212 $\frac{12}{15}$ bu.		

## SECTION 25.

1.	$\frac{15}{24}$	4.	$\frac{35}{43}$
2.	$\frac{6}{14}$	5.	$\frac{13}{40}$
3.	$\frac{18}{18}$ or 1		

## SECTION 26.

1.	$\frac{1}{2}$ $\frac{2}{3}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{2}{3}$ $\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{2}$	4.	5
2	$\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{1}{10}$ $\frac{1}{2}$ $\frac{1}{40}$	5.	$\frac{8}{21}$
3	Performed.	6.	$\frac{1}{8}$ $\frac{13}{28}$ $\frac{19}{25}$

## SECTION 27.

1.	$\frac{1}{5}$	7.	$\frac{27}{187}$
2.	$\frac{1}{24}$	8.	$\frac{1}{12}$ of 1s. $\frac{1}{240}$ of £1
3	$\frac{1}{2}$	9.	$\frac{7}{240}$ of £1
4.	$\frac{7}{16}$ of an acre.	10.	$\frac{1}{48}$ of an ounce.
5.	$\frac{28}{45}$	11	$\frac{3}{16}$ of a yard.
6.	$\frac{15}{42}$ of 1	12.	$\frac{1}{5}$ of a yard.

13.	$\frac{1}{144}$ of an hour.	28.	Performed
14.	$\frac{1}{10}$	29.	13s. 4d.
15.	$\frac{3}{25}$ of 1	30.	8s. 10d. $2\frac{2}{3}$ qr.
16.	$\frac{2}{169}$	31.	4d. 2qr.
17.	Performed.	32.	£15 11s. 5d. $0\frac{4}{7}$
18.	$\frac{25}{192}$ of £1	33.	3qr. 3lb. 1oz. $12\frac{4}{5}$ dr.
19.	$\frac{47}{960}$ of £1	34.	9lb. 9oz. $9\frac{2}{3}$ dr.
20.	$\frac{241}{320}$ of £1	35.	4fur. 17r. 12ft. 10in.
21.	$\frac{41}{48}$ of a shilling.	36.	10A. 1R. 5r. 194ft. $66\frac{6}{7}$ in.
22.	$\frac{679}{4800}$ of £1	37.	5 dimes, 8 cents, $3\frac{1}{2}$ mills.
23.	$\frac{1}{28}$ of £1	38.	45 cents, $4\frac{6}{11}$ mills.
24.	$\frac{11}{64}$ of a bushel.	39.	9cwt. 1qr. 18lb. 10oz. $10\frac{2}{3}$ dr.
25.	$\frac{79}{504}$ of 1 hhd.		
26.	$\frac{1}{48}$ of a mile.		
27.	$\frac{13}{32000}$ of a day.		

## SECTION 28.

1.	Performed.	7.	$1\frac{147}{423}$
2.	$\frac{60}{150} \frac{60}{150} \frac{50}{150}$	8.	$1\frac{125}{350}$
3.	$\frac{165}{210} \frac{84}{210}$	9.	$\frac{17}{60}$
4.	$\frac{120}{240} \frac{60}{240} \frac{152}{240}$	10.	$\frac{8}{31}$
5.	$\frac{240}{420} \frac{140}{420} \frac{168}{420} \frac{105}{420}$	11.	$\frac{7}{18}$ is $\frac{5}{198}$ greater.
6.	$\frac{50}{63}$		

## SECTION 29.

1.	$380\frac{7}{24}$ bushels.	6.	$46\frac{61}{72}$ gallons.
2.	$160\frac{19}{360}$ acres.	7.	$287\frac{41}{420}$
3.	$3063\frac{121}{520}$	8.	$\frac{37}{91}$ of the loaf.
4.	$2\frac{4}{21}$	9.	$6\frac{17}{60}$ barrels
5.	$1221\frac{13}{20}$		



## SECTION 30.

1.	24 men.	8.	$3\frac{1}{2}$ times.
2.	24 times.	9.	$4\frac{4}{5}$ times.
3.	24 pairs.	10.	$7\frac{3}{5}$ barrels.
4.	24	11.	$3\frac{9}{181}$ times.
5.	115	12.	$6\frac{9}{265}$ times.
6.	$13\frac{1}{3}$ miles.	13.	$2\frac{4}{57}$ barrels.
7.	$13\frac{1}{3}$ times.		

## SECTION 31.

1.	$45\frac{4}{9}$ days.	14.	$1\frac{6}{13}$
2.	117 pounds.	15.	$82\frac{1}{72}$ acres.
3.	$\$4.68\frac{3}{4}$	16.	$14\frac{1}{7}\frac{3}{5}$
4.	$37\frac{1}{4}$ yards.	17.	$\frac{7}{45}$
5.	$\$2\frac{1}{20}$	18.	$18\frac{4}{79}\frac{6}{1}$ hours.
6.	$4\ 847\frac{1}{2}$ bushels.	19.	$\frac{3}{36}\frac{1}{6}$
7.	$\$554.96\frac{1}{10}$	20.	$\frac{8}{1885}$
8.	$\frac{7}{6}\ 11\frac{5}{6}$	21.	$3808\frac{2}{23}\frac{3}{2}$
9.	$\$23.80\frac{4}{42}$	22.	$27\ 931\frac{3}{7}$
10.	$197\frac{2}{14}$ cords.	23.	$\frac{1}{22}\frac{7}{55}$
11.	$177\frac{1}{7}$ days.	24.	$1\frac{2}{38}\frac{5}{4}$
12.	$77\frac{1}{7}$ days.	25.	$4981\frac{1}{11}$
13.	$\frac{6}{9}\ \frac{24}{36}\ \frac{50}{75}$	26.	$12\frac{8}{105}$

## SECTION 32.

1.	11d. 8h.	5.	$\$1\ 162$
2.	$\$1.66\frac{2}{3}$	6.	$552\frac{7}{21}\frac{2}{9}$ men.
3.	$8\frac{23}{224}$ cents.	7.	$\$40.90\frac{1}{11}$
4.	37bu. 1pk. 6qt. $0\frac{5}{6}\frac{6}{2}$ pt.	8.	$\$1\ 323$

9. A, \$236.60 To St. Louis, 884m.  
 B, \$263.90 To Natchez, 1394m.  
 10. 13 $\frac{65}{72}$  To N. Orleans, 1468m.  
 11. To Augusta, 622m. From N. O. to A.  
 To Detroit, 520m. 2090m.

		d.	h.	m.	s.
12. From Baltimore,	in		5	25	42 $\frac{6}{7}$
Philadelphia,	"	1	9	42	51 $\frac{3}{7}$
New York,	"	3	2	34	17 $\frac{1}{7}$
Hartford,	"	5	0	8	34 $\frac{2}{7}$
Boston,	"	6	4	25	42 $\frac{6}{7}$
Portland,	"	8	1	17	8 $\frac{4}{7}$
Augusta, Me.	"	8	8	51	25 $\frac{5}{7}$
Albany,	"	5	4	8	34 $\frac{2}{7}$
Montpelier,	"	8	7	17	8 $\frac{4}{7}$
Pittsburgh,	"	3	1	25	42 $\frac{6}{7}$
Buffalo,	"	5	4	17	8 $\frac{4}{7}$
Detroit,	"	7	4	17	8 $\frac{4}{7}$
Wheeling,	"	3	7	42	51 $\frac{3}{7}$
Cincinnati,	"	7	0	34	17 $\frac{1}{7}$
Vandalia,	"	11	3	25	42 $\frac{6}{7}$
St. Louis,	"	12	6	17	8 $\frac{4}{7}$
Louisville,	"	8	6	17	8 $\frac{4}{7}$
Nashville,	"	11	6	17	8 $\frac{4}{7}$
Tuscaloosa,	"	14	9	8	34 $\frac{2}{7}$
Natchez,	"	19	9	8	34 $\frac{2}{7}$
Richmond,	"	1	7	34	17 $\frac{1}{7}$
Raleigh,	"	4	1	8	34 $\frac{2}{7}$
Charleston,	"	7	7	42	51 $\frac{3}{7}$

		d.	h.	m.	s.
From Savannah,	in	9	3	51	25 $\frac{5}{7}$
Tallahassee,	"	14	1	8	34 $\frac{2}{7}$
Mobile,	"	18	6	51	25 $\frac{5}{7}$
New Orleans,	"	20	9	42	51 $\frac{3}{7}$
Norfolk,	"	3	3	51	25 $\frac{5}{7}$
Augusta, Ga.	"	8	2	34	17 $\frac{1}{7}$

13.		21. E, 113A. 0R. 12 $\frac{4}{13}$ r.
14. Between Charleston and Raleigh. 121 miles from C., 135 miles from R.		F. 131A. 3R. 27 $\frac{9}{13}$ r.
15. Between Boston and Hartford; 57 miles from Boston.	22.	237 500 families.
16. A, \$142.85 $\frac{5}{7}$ B, \$285.71 $\frac{3}{7}$ C, \$571.42 $\frac{6}{7}$	23.	8 $\frac{2}{11}$ days.
17. 10lb. sulphur. 14lb. charcoal. 76lb. nitre.	24.	5 $\frac{10}{17}$ days.
18. A's share, \$2.81 $\frac{1}{4}$ B's share, \$2.18 $\frac{3}{4}$	25.	6 $\frac{2}{3}$ days.
19. C's share, \$88.78 $\frac{28}{74}$ D's share, \$57.21 $\frac{46}{74}$	26.	9 $\frac{3}{5}$ days.
20 \$80.73	27.	20 yards.
	28.	5 $\frac{5}{6}$ yards.
	29.	26 yards.
	30.	3 240 bricks.
	31. $\frac{47}{60}$ of 1A. 11 $\frac{23}{47}$ days.	
	32. $\frac{37}{60}$ of it.	
	1h. 37m. 17 $\frac{31}{37}$ s.	
	33.	176ft. 1 $\frac{3}{4}$ in.
	34.	\$43.27 $\frac{3}{11}$
	35.	136 $\frac{4}{11}$ rods.
	36.	175 pounds.
	37.	48
	38.	A, \$16.66 $\frac{2}{3}$ B, \$13.33 $\frac{1}{3}$

39.  $6\frac{32}{203}$  times greater than New-York.  
 $7\frac{81}{167}$  times greater than Philadelphia.  
 $15\frac{5}{8}$  times greater than Baltimore.  
 $20\frac{30}{61}$  times greater than Boston.
40. 2 492 782  
 41. 34 014  
 42. 26 680  
 43. 11 944

## SECTION 33.

1. .3    .46    .708    .1 642    .96 041  
 2. 38.5    516.22    8.354    24.7 636  
 3. .04  
    .007  
    .0003  
    .00006  
    .000008
4. Six *hundredths*.  
 Eight *thousandths*.  
 Thirteen *thousandths*.  
 Five hundred and fourteen *ten-thousandths*.  
 Sixty-five *thousandths*.  
 Four hundred and nine *thousandths*.  
 Two hundred seven thousand, eight hundred and  
    sixty-two *millionths*.  
 Five thousand and four *ten-thousandths*.  
 Seven *ten-thousandths*.  
 Six thousand, two hundred and sixty-four *hundred-thousandths*.  
 Ten thousand, eight hundred and nine *hundred-thousandths*.  
 Six million, five hundred thousand, one hundred  
    and seventy-one *ten-millionths*.

24, and two *hundredths*.

5, and seven hundred sixty-three thousand, and eighty-four *millionths*.

160, and fifty-two *thousandths*.

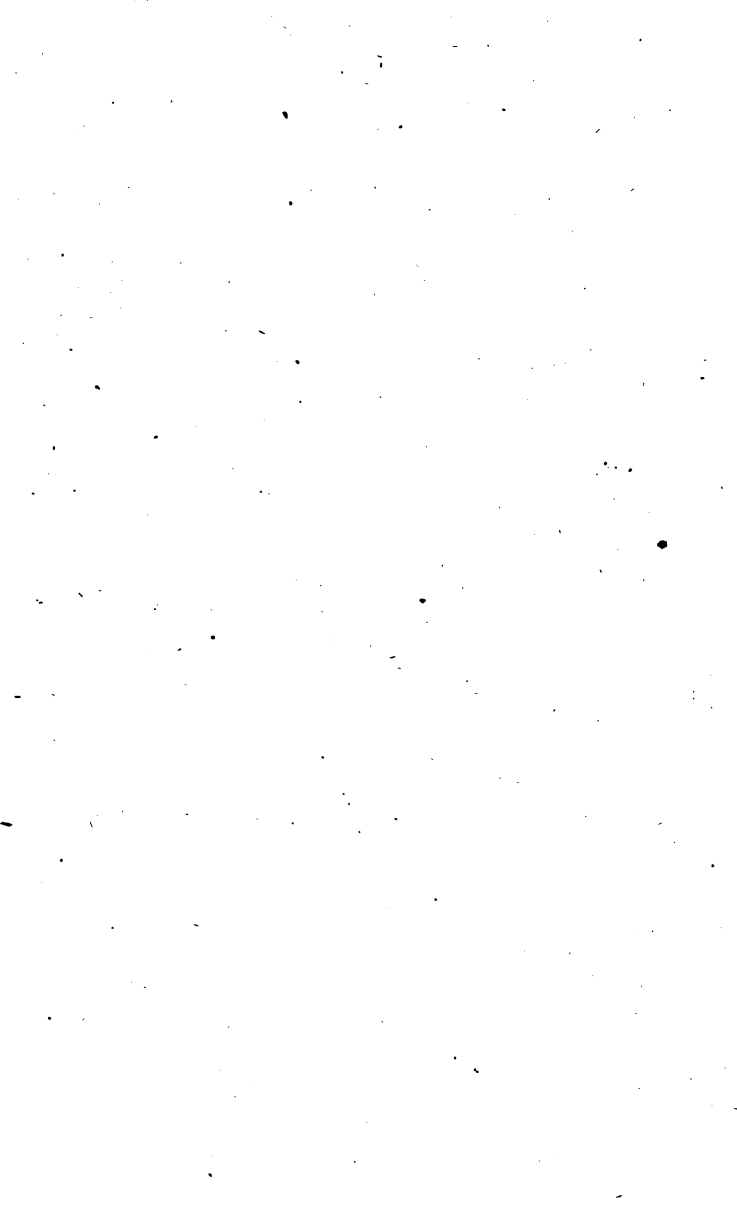
712, and three thousand and five *ten-thousandths*.

5.	9.06	19.	\$9.927
	8.014	20.	Performed.
	3.101	21.	643.2
	46.051	22.	\$3.60
	7.0305	23.	\$17.82
	65.007	24.	\$73.296
	12.0016	25.	\$258.30
	200.006	26.	\$78.213
	1.4006	27.	\$.0063
	60.008	28.	\$20.424
	8 040607	29.	3012.41164
	26.0000015	30.	1906.872
6.	Performed.	31.	.03068019
7.	1821.1316	32.	2.6303262
8.	3850.7995	33.	.0028
9.	38.729	34.	.000045
10.	54.645	35.	.04230
11.	Performed.	36.	Performed.
12.	7 327.464	37.	Performed.
13.	4 518.3426	38.	Performed.
14.	15 947.8 294	39.	2456.7
15.	.72	40.	.004319+
16.	.13 933	41.	378000
17.	.954	42.	46.27
18.	\$3.403	43.	3.153+

44.	.365	67.	15cwt. 0qr. 22lb
45.	1.184+		6oz. 6dr.+
46.	.1	68.	5h. 1m. 32s.+
47.	Performed.	69.	2R. 11r. 54ft.+
48.	.5	70.	£15 5 9 3
49.	.666+	71.	16 cents 6 mills+
	.25		33 cents 3 mills+
	.75		50 cents.
	.65		66 cents 6 mills+
	.277+		83 cents 3 mills+
	.4166+	72.	12 cents 5 mills.
	.378+		25 cents.
	.069+		37 cents 5 mills.
50.	\$ .562+		50 cents.
51.	\$48.714+		62 cents 5 mills.
52.	£316.625		75 cents.
53.	£ .375		87 cents 5 mills.
54.	£ .75	73.	13 cents 3 mills+
55.	.5625 of 1s.		26 cents 6 mills+
56.	£ .1489+		40 cents.
57.	.0208+ of 1s.		53 cents 3 mills+
58.	£18.1291+		66 cents 6 mills+
59.	.737+ of 1oz.		80 cents.
60.	.1406 of 1bu.		
61.	.937+ of 1gal.	74	21 cents 4 mills+
62.	.0333+ of 1 mile.		42 cents 8 mills+
63.	\$226.367+		64 cents 2 mills+
64.	Performed.		85 cents 7 mills+
65.	8s. 0d. 3qr.+	75.	\$2.42,7-
66.	10d. 1qr.+	76.	\$1.58,5-

77.	\$2.18,8+	83.	\$675.10
78.	\$4.00,8+	84.	\$103.41,4
79.	\$1.33,3+	85.	\$32.10
	\$1	86.	\$48.67
	\$1.06,6+	87.	\$78.39
	\$1.71,4+	88.	\$287.50
80.	\$14.27,4+	89.	\$2 388.28
81.	\$78.75	90.	\$117 71
82.	\$1687.50		

THE END.











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